# CHAPTER 5. OCCUPATIONAL ILLNESSES

Occupational illnesses are more difficult to identify than on-the-job injuries. Many illnesses related to occupational exposures may not be diagnosed until years after exposure; by that time, exposed workers may have changed jobs or left the workforce. Other approaches to identifying occupationally related illness are analysis of death certificate data (see chapter 2) and medical examination studies of workers known to have high exposures to hazardous agents.

Figures 5-1, 5-3, 5-4, 5-6, 5-8, and 5-10 show, for each commodity, the percent of illness conditions reported to MSHA by nature of condition. Heart attacks that occurred on the job are reported without regard to work-relatedness. Figures 5-2, 5-5, 5-7, 5-9, and 5-11 show rates by year during 1986-1995 for selected conditions. *Since there are many limitations on the accuracy of illness reporting, the frequencies and rates shown here should not be considered directly comparable across commodities.*

Figure 5-12 shows estimates for hearing loss by age among coal miners compared to a nonoccupationally noise-exposed population. These data come from a study by Franks [1996] of a group of audiograms obtained on coal miners by a commercial company. Using the NIOSH definition of hearing impairment, i.e., an average hearing threshold level for both ears that exceeds 25 dB at frequencies of 1,000, 2,000, 3,000 and 4,000 Hz, the figure shows that by age 30, more than 10% of miners suffer hearing impairment; by age 50, 90% of miners have hearing impairment. In contrast, only 10% of the nonoccupationally noise-exposed population suffer hearing impairment at age 51, and 50% of the nonoccupationally exposed population have hearing impairment at age 69.

Figure 5-13 shows a similar analysis of commercial audiograms on male metal/nonmetal miners [Franks 1997]. At age 20, approximately 2% have hearing impairment using the NIOSH definition of hearing impairment described above. This increases to 7% at age 30, 25% at age 40, and 49% at age 50. In contrast, only 9% of the nonoccupationally noise-exposed comparison population have hearing impairment at age 50. Franks' analysis showed a different pattern for female metal/nonmetal miners; they developed hearing loss at the same rate as would be expected for a non-noise-exposed female population.

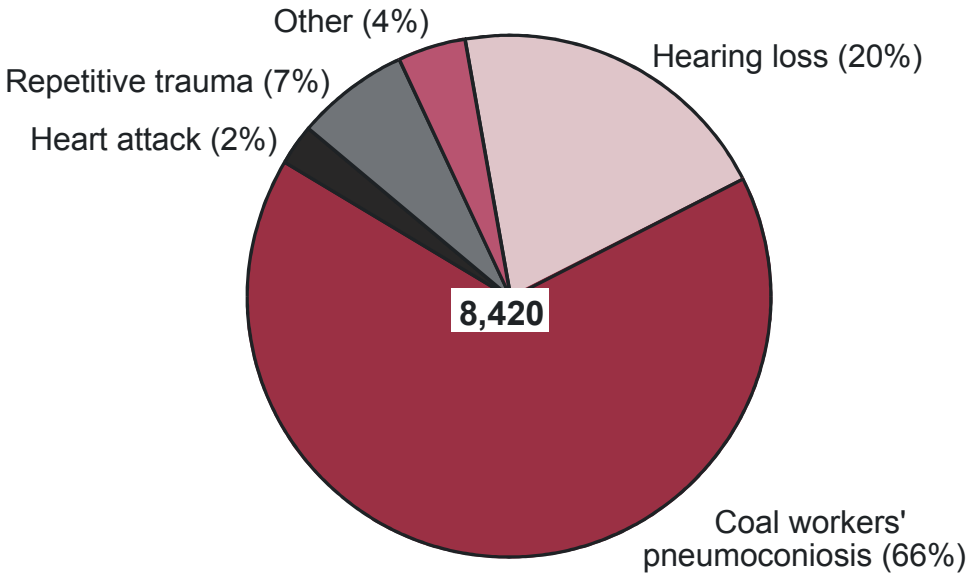


**Figure 5-1.—Coal operators: percent of illness conditions reported by nature of condition, 1986-1995. (Source: MSHA data)**

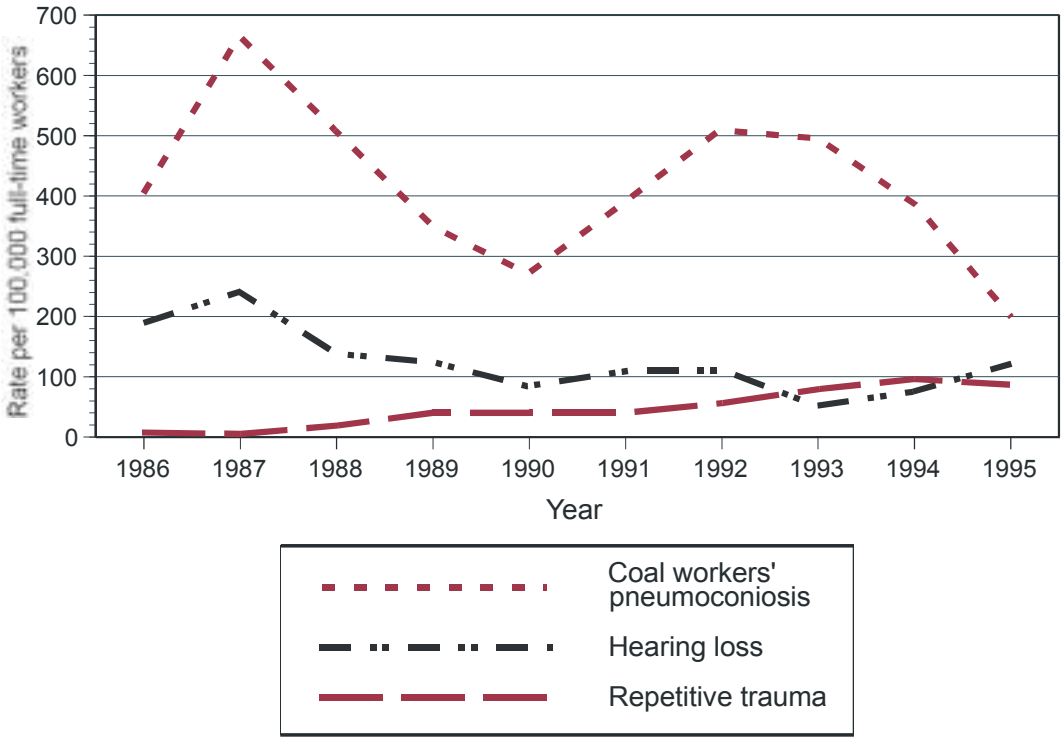


**Figure 5-2.—Coal operators: rate of illness conditions reported (per 100,000 workers) for selected conditions by year, 1986-1995. (Source: MSHA data)**

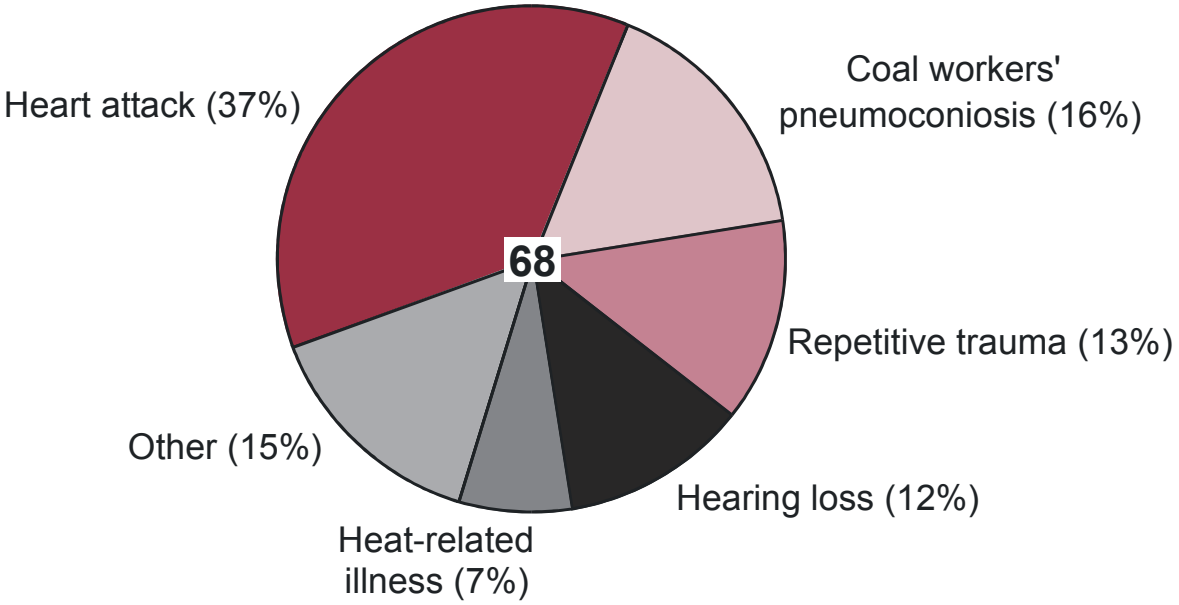


**Figure 5-3.—Coal contractors: percent of illness conditions reported by nature of condition, 1986-1995. (Source: MSHA data)**

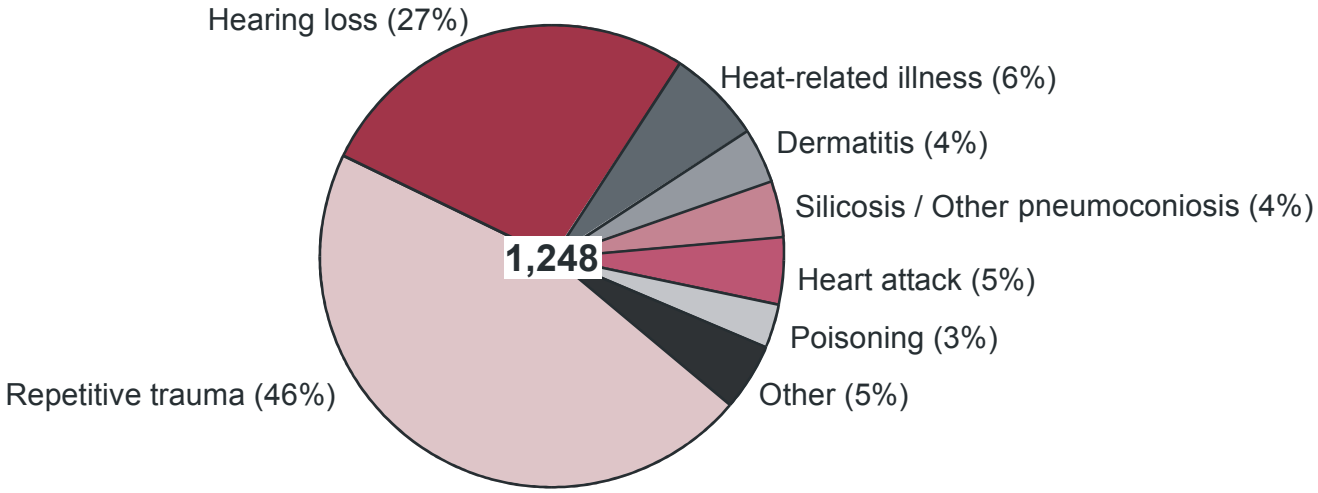


**Figure 5-4.—Metal operators: percent of illness conditions reported by nature of condition, 1986-1995. (Source: MSHA data)**

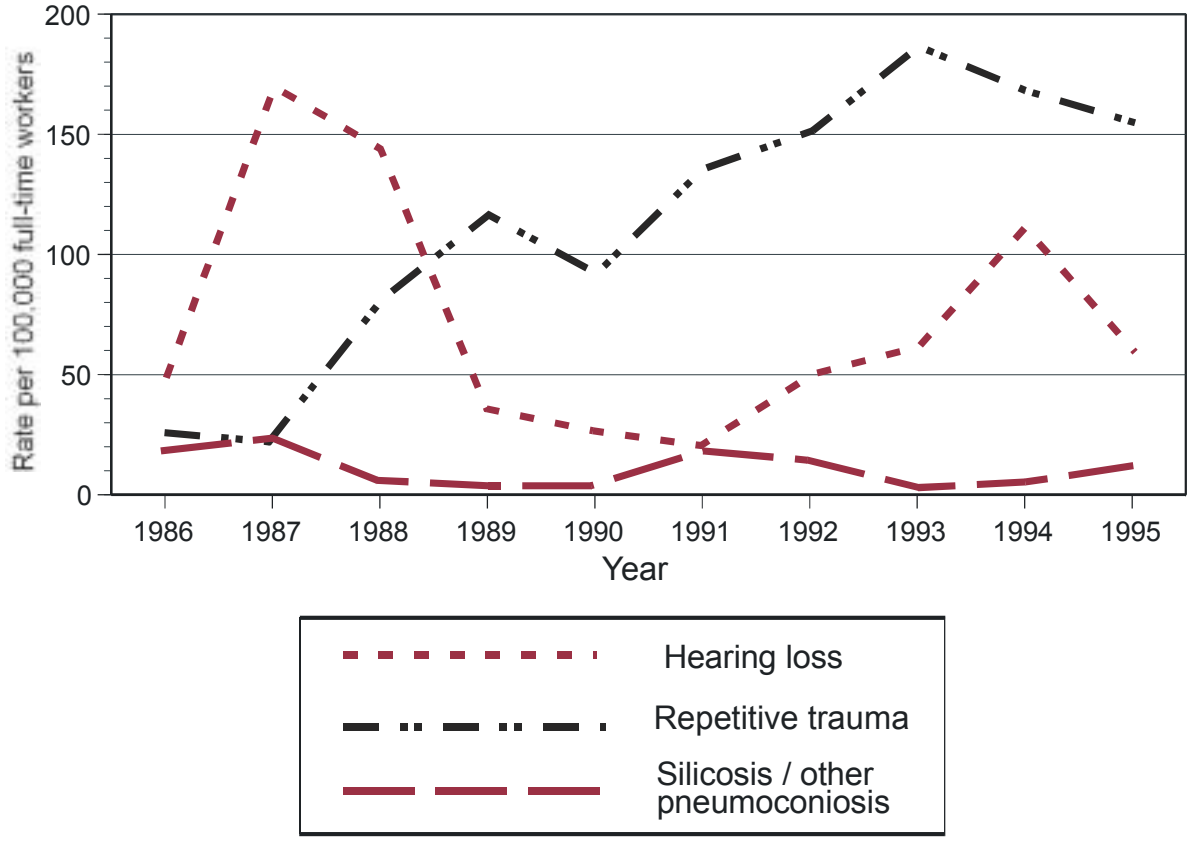


**Figure 5-5.—Metal operators: rates of illness conditions reported (per 100,000 workers) for selected conditions by year, 1986-1995. (Source: MSHA data)**

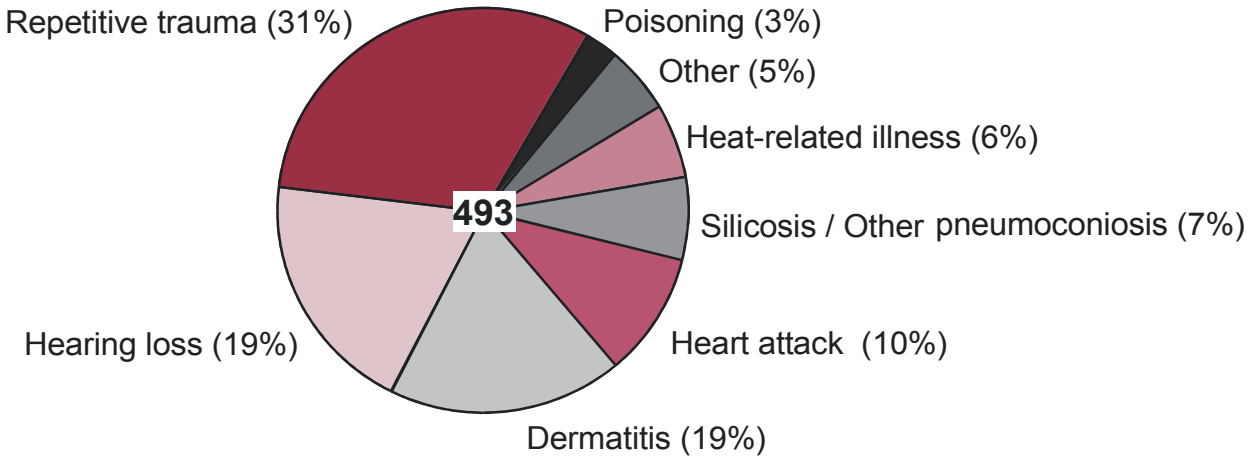


**Figure 5-6.—Nonmetal operators: percent of illness conditions reported by nature of condition, 1986-1995. (Source: MSHA data)**

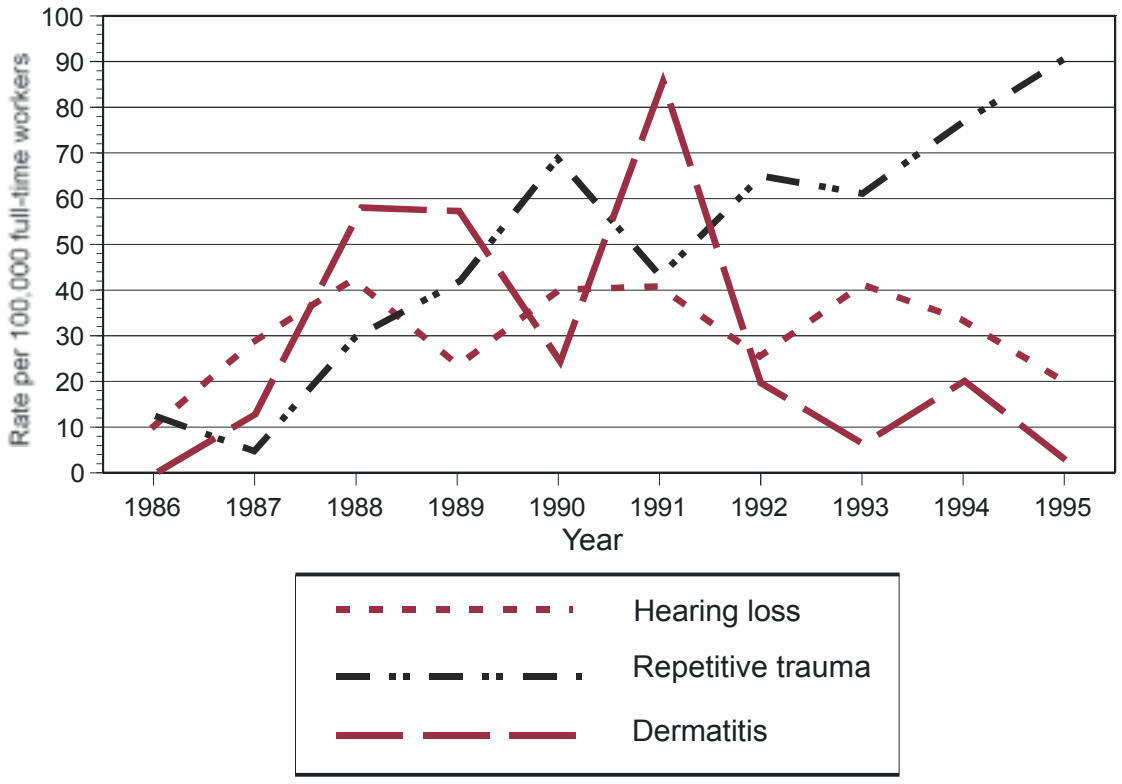


**Figure 5-7.—Nonmetal operators: rates of illness conditions reported (per 100,000 workers) for selected conditions by year, 1986-1995. (Source: MSHA data)**

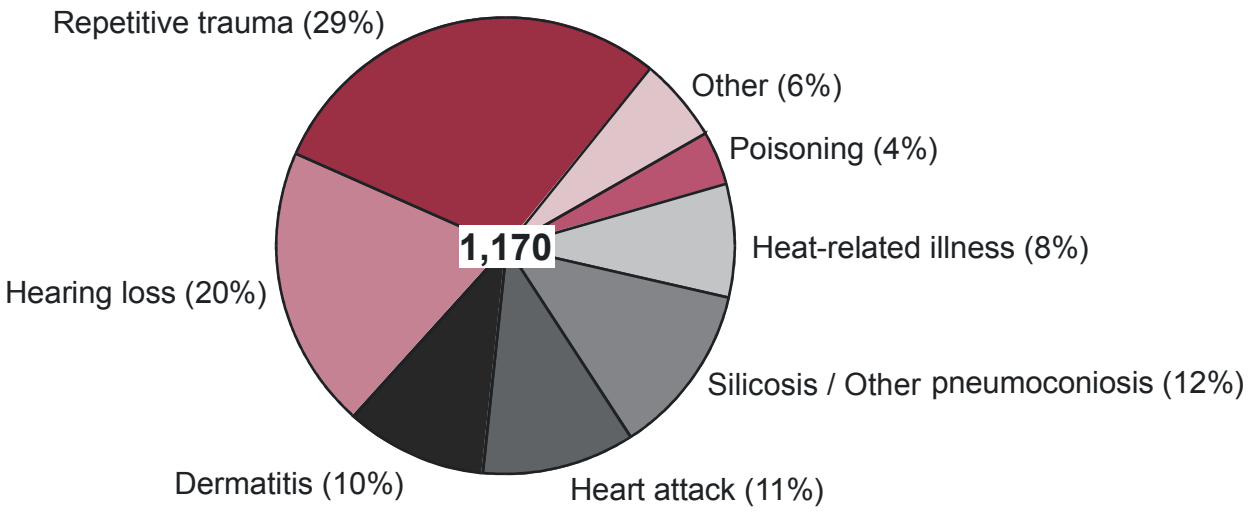


**Figure 5-8.—Stone operators: percent of illness conditions reported by nature of condition, 1986-1995. (Source: MSHA data)**

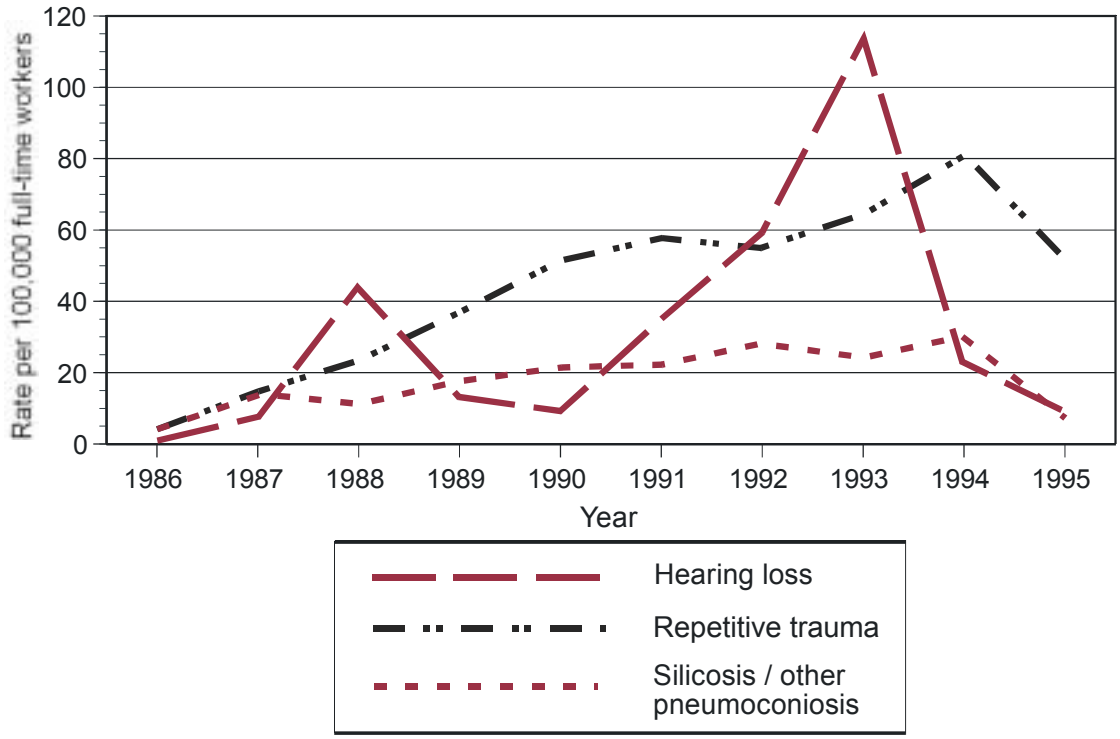


**Figure 5-9.—Stone operators: rates of illness conditions reported (per 100,000 workers) for selected conditions by year, 1986-1995. (Source: MSHA data)**

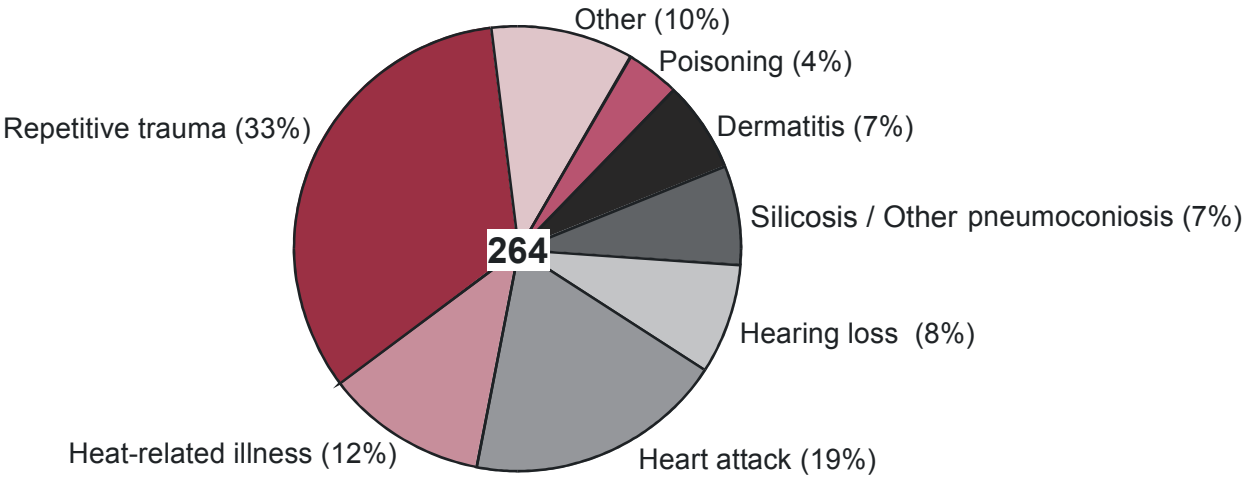


**Figure 5-10.—Sand and gravel operators: percent of illness conditions reported by nature of condition, 1986-1995. (Source: MSHA data)**

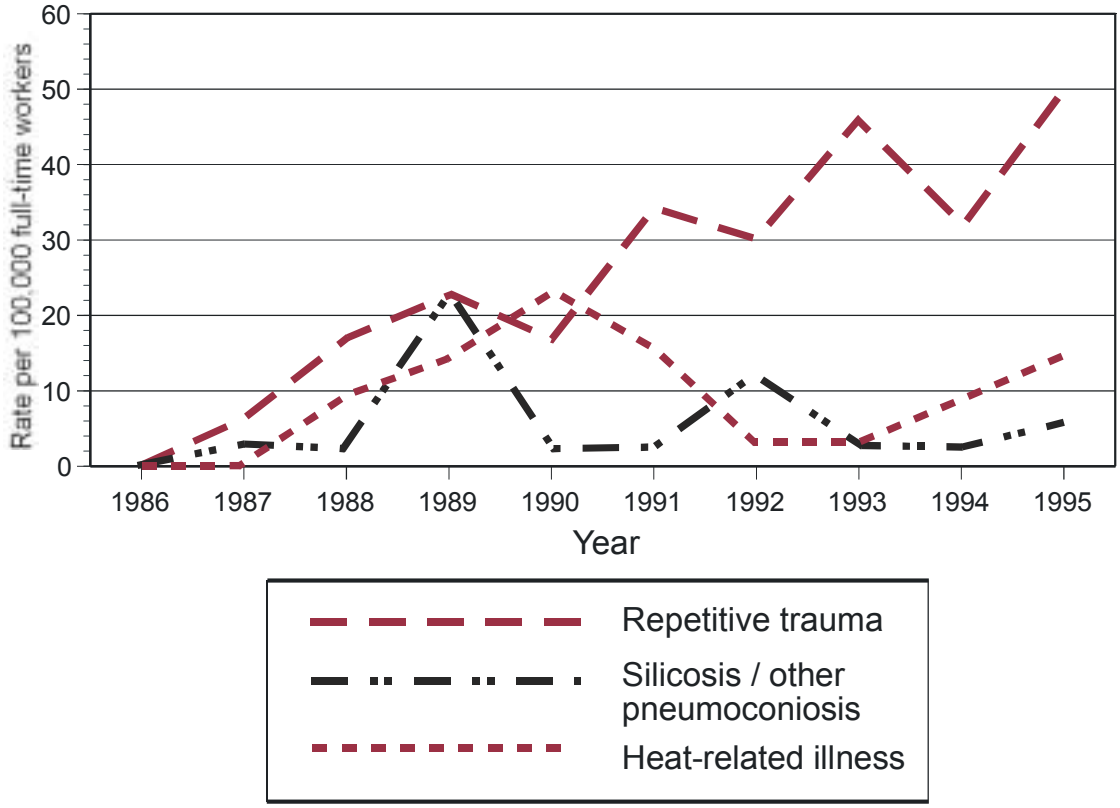


**Figure 5-11.—Sand and gravel operators: rates of illness conditions reported (per 100,000 workers) for selected conditions by year, 1986-1995. (Source: MSHA data)**

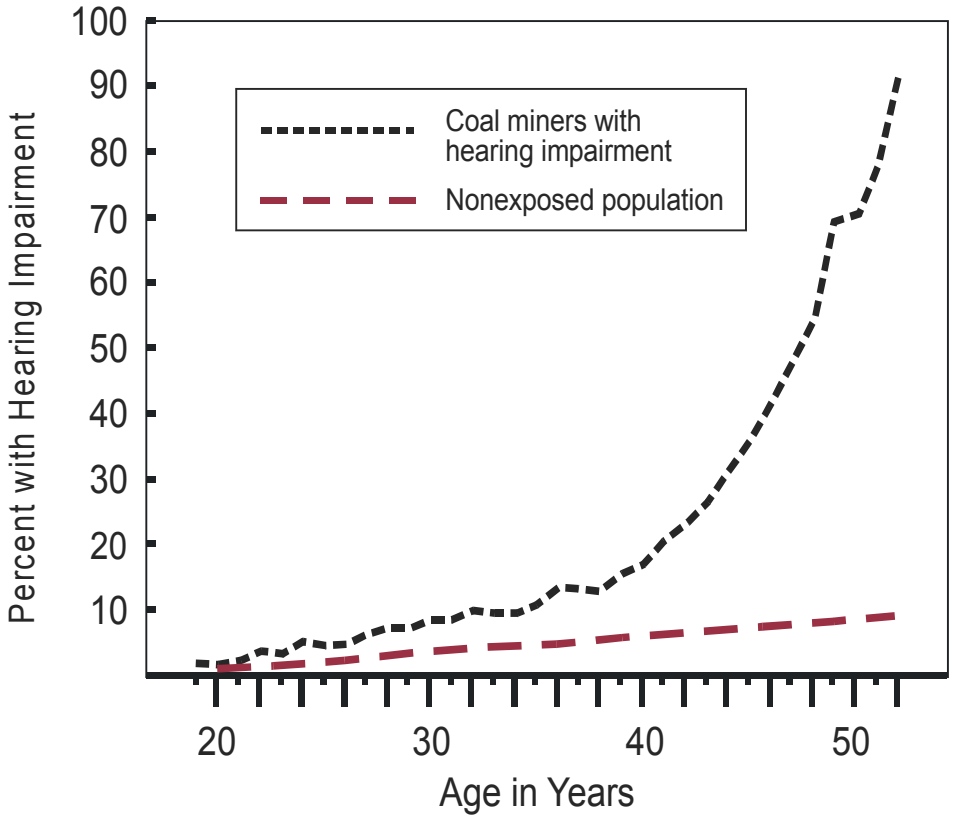


**Figure 5-12.—Percent of coal miners with NIOSH-defined hearing impairment by age compared to the percent of the nonoccupationally noise-exposed population having hearing impairment as calculated from ISO-1999. (Source: Franks [1996])**

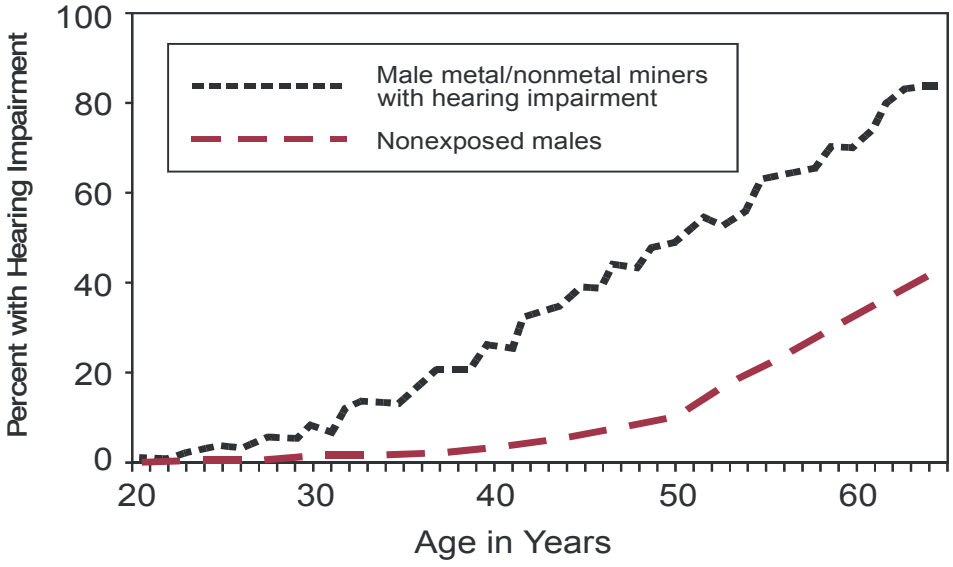


**Figure 5-13.—Percent of male metal/nonmetal miners with NIOSH-defined hearing impairment by age compared to the percent of the nonoccupationally noise-exposed male population having hearing impairment as calculated from ISO-1999. (Source: Franks [1997])**